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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,084	08/24/2005	Hakan Engqvist	1510-1097	2895
466 7590 04/06/2009 YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314			EXAMINER KOSLOW, CAROL M	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 04/06/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/518,084

**Applicant(s)**

ENGQVIST ET AL.

**Examiner**

C. Melissa Koslow

**Art Unit**

1793

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 40-44, 46-54 and 56-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 41, 43, 46, 47 and 54 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 42, 44, 48-53 and 56-59 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 February 2009 has been entered.

The amendments to the specification and the claims have overcome the objection to the disclosure and the 35 USC 112 rejections over claims 1-4 and 39-60 with respect to the phrase "a phrase that has a capacity to form water soluble phosphate". The amendments to the claims have overcome the 35 USC 112 rejections over claims 5, 45, 49, 55, 56 and 60 and the 35 USC 112, second paragraph rejection over claims 54. Applicant's arguments with respect to the remaining objections and rejections have been fully considered but they are not persuasive.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The subject matter of claims 3 and 4 are not found in the specification. The specification teaches the maximum volume% of apatite formed during hydration is 30 vol% and that the liquid has a pH of at least 7. The specification is silent as to the pH of the system. The teaching in claims 50 and 58 that the salt can be citrates is not found in the specification. Finally, the teaching of claim 56 that the phosphate can be hydro-ammonium phosphate is not found in the specification. It is noted that the subject discussed above is all found in the originally filed claims and thus are part of the originally filed disclosure.

While applicants are correct the claimed subject matter is part of the disclosure, this fact does not affect the objection which is that the claimed subject matter is not found in the

specification and thus the specification does not provide proper antecedent basis for what is being claimed. Applicants' comments with respect to the objection to claims are noted, but the claims are not objected to; it is the specification that is being objected to.

Applicants' argue that pages 1-10 provide antecedent basis for the claimed subject matter, the Examiner is unable to find the claimed subject matter on any of these pages. The objection is maintained.

Claim 54 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 8 teaches the concentration of phosphate ions in the hydration liquid is 0.01-5 M. Claim 54 teaches the amount of water soluble phosphate or a phase that forms phosphate ions during hydration is present in an amount of 0.01-5 M. Phosphate ions are different from water soluble phosphate or a phase that has a capacity to form water soluble phosphate. This difference in composition needs to be clarified.

The amendment to page 8 does not overcome this rejection. The rejection is maintained.

Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 47 is indefinite since it is unclear if these grains are composed of the water soluble phosphate of claim 46, the phase that forms phosphate ions during hydration of claim 46 or a phosphate-containing composition different from those of claim 46.

The fact the specification teaches can be a water soluble phosphate and the phase that forms phosphate ions during hydration can be present in the powder does not clarify if the phosphate in claim 47 refers to those of claim 46 or a different phosphate containing material. The rejection is maintained.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 40, 41, 43, 46 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent 6,143,069.

This reference teaches a hydraulic cement system comprising a powder comprising calcium aluminate; sodium polyphosphate; fly ash, which is a silicate; and water, which has a pH of 7. This system forms hydroxyapatite during hydration (col. 3, lines 19-22). The reference does not teach the volume percentages of hydroxyapatite formed, but since the taught system is identical to that claimed, it must produce a volume percent that falls within the claimed ranges, absent any showing to the contrary. The calcium aluminate of the reference is Refcon (col. 3, lines 5-10 and the examples). The technical data sheet for the Refcon teaches the cement contains at most 6 wt% silica; at least 55 wt% alumina; at most 2 wt%  $\text{Fe}_2\text{O}_3$ , at most 34 wt% CaO, at most 1.5 wt% MgO and at most 0.4 wt%  $\text{SO}_3$ . (ASTM C-114 calculates the chemical composition of a cement in terms of weight percentages). This composition corresponds to at most 7.68 mol% silica; at least 41.48 mol% alumina; at most 0.96 mol%  $\text{Fe}_2\text{O}_3$ , at most 46.62 mol% CaO, at most 2.88 mol% MgO and at most 0.38 mol%  $\text{SO}_3$ . Thus the taught calcium aluminate cement has a larger mole content of calcium than aluminum. The reference teaches the claimed system.

In response to applicant's argument that the taught cement system is not used as a dental filling material, an implant material or as material used to bond a tooth or bone and a dental filling material and an implant material, a recitation of the intended use of the claimed invention must result in a structural or compositional difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art composition is capable of performing the intended use, then it meets the claim. There has been no showing that the taught material is not capable of the argued intended use. With respect to the arguments addressing the added limitation that the molar amount of calcium is larger than aluminum in the cement, as discussed above, the taught cement meets this limitation. As stated in the Advisory Action, the argument that the fly ash shift the ratio of Ca:Al to an aluminum surplus is not convincing since the reference does not teach or consider fly ash as being part of the calcium aluminate cement binder phase. The rejection is maintained.

Claims 4, 5, 42, 44, 48-53 and 56-59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 5 is allowable for the reason given in the previous actions. Claims 4, 42, 48-52 and 56-59 are allowable over the cited art of record since there is no teaching or suggestion in the cited prior art of the claimed system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/  
April 4, 2009

/C. Melissa Koslow/  
Primary Examiner  
Art Unit 1793